



Effects of the 1997-1998 El Nino episode on community rates of diarrhea

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Abstract:

OBJECTIVES: To improve our understanding of climate variability and diarrheal disease at the community level and inform predictions for future climate change scenarios, we examined whether the El Nino climate pattern is associated with increased rates of diarrhea among Peruvian children. **METHODS:** We analyzed daily surveillance data for 367 children aged 0 to 12 years from 2 cohorts in a peri-urban shantytown in Lima, Peru, 1995 through 1998. We stratified diarrheal incidence by 6-month age categories, season, and El Nino, and modeled between-subject heterogeneity with random effects Poisson models. **RESULTS:** Spring diarrheal incidence increased by 55% during El Nino compared with before El Nino. This increase was most acute among children older than 60 months, for whom the risk of a diarrheal episode during the El Nino spring was nearly 100% greater (relative riskEuro Surveillance (Bulletin European Sur Les Maladies Transmissibles; European Communicable Disease Bulletin)1.96; 95% confidence intervalEuro Surveillance (Bulletin European Sur Les Maladies Transmissibles; European Communicable Disease Bulletin)1.24, 3.09). **CONCLUSIONS:** El Nino-associated climate variability affects community rates of diarrhea, particularly during the cooler seasons and among older children. Public health officials should develop preventive strategies for future El Nino episodes to mitigate the increased risk of diarrheal disease in vulnerable communities.

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Resource Description

Early Warning System:

resource focus on systems used to warn populations of high temperatures, extreme weather, or other elements of climate change to prevent harm to health

A focus of content

Exposure :

weather or climate related pathway by which climate change affects health

El Nino Southern Oscillation, Temperature

Temperature: Fluctuations

Geographic Feature:

Climate Change and Human Health Literature Portal

resource focuses on specific type of geography

Other Geographical Feature

Other Geographical Feature : Peri-urban

Geographic Location: 

resource focuses on specific location

Non-United States

Non-United States: Central/South America

Health Impact: 

specification of health effect or disease related to climate change exposure

Infectious Disease

Infectious Disease: Foodborne/Waterborne Disease

Foodborne/Waterborne Disease: Cryptosporidiosis, Giardiasis, Other Diarrheal Disease

Foodborne/Waterborne Disease (other): Cyclosporiasis;diarrheal disease

Mitigation/Adaptation: 

mitigation or adaptation strategy is a focus of resource

Mitigation

Population of Concern: A focus of content

Population of Concern: 

populations at particular risk or vulnerability to climate change impacts

Children

Resource Type: 

format or standard characteristic of resource

Research Article

Timescale: 

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment: 

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content